



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,676	04/02/2004	Claude Beauducel	612.43696X00	9760
20457	7590	01/30/2006	EXAMINER	
ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-3873			LARKIN, DANIEL SEAN	
			ART UNIT	PAPER NUMBER
			2856	

DATE MAILED: 01/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/815,676	<b>Applicant(s)</b> BEAUDUCEL ET AL.	
	<b>Examiner</b> Daniel S. Larkin	<b>Art Unit</b> 2856	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 November 2005.  
2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.  
4a) Of the above claim(s) 13-19 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-12 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 22 July 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \*    c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>02 April 2004</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of the species embodied in Figure 2, claims 1-12, in the reply filed on 10 November 2005 is acknowledged. The traversal is on the ground(s) that the species cited are not "mutually exclusive". This is not found persuasive because the applicants disclose that the two species are variations of one another. The examiner argues that these variations support a species rejection. Additionally, the examiner argues that the species are patentably distinct. Moreover, applicants' contention that newly presented claim 19 is generic to claims 1 and 13, is incorrect. Newly presented claim 19, recites determining the composition of at least one layer of a fluid, whereas claim 1, recites determining the composition of a homogeneous fluid. A homogeneous fluid does not have layers and a layered fluid is not homogeneous. This fact would appear to suggest that these two claims are mutually exclusive.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 13-19 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 10 November 2005.

***Priority***

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Drawings***

4. The drawings are objected to because of the following:

Reference box "6", as shown in Figure 1, should also be labeled

-- measuring means -- in order to more clearly identify the structure of the invention without have to read the specification.

Reference boxes "3" and "5", as shown in Figure 1, should also be labeled

-- multiplexer --.

5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering

Art Unit: 2856

of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

6. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

7. The disclosure is objected to because of the following informalities:

Page 8, line 19: The term -- one -- should be inserted after the term "allows".

Page 9, line 3: The term -- one -- should be inserted after the term "allows".

Page 27, line 1: A phrase similar to -- What Is Claimed Is: -- or -- What We Claim Is: -- should be inserted prior to the first claim. Appropriate correction is required.

### ***Claim Objections***

8. Claims 1-12 are objected to because of the following informalities:

Re claim 1, claim line 4: The "comma" should be replaced with a -- semicolon --.

Re claim 1, claim line 6: The "comma" should be replaced with a -- semicolon --; and the conjunction -- and -- should be inserted after the phrase "stage a)". Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 2 and 3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 2, claim lines 1 and 2: How can "said wave beams" be the same as the "at least two wave beams" recited in claim 1, claim line 3? The beams of claim 1 are of "different distances", while the beams of claim 2 are recited as being of "equal distance". Presently, claim 2 is directed to a minimum of 2 beams. However, if two or three beams are recited as having different distances, then these same two or three beams cannot have equal distances. Should claim 2 include at least 4 beams (i.e. two of "different distances" of claim 1; and two of "equal distance" (of claim 2))? In effect, should "of said" (line 1 of claim 2) read -- additional --?

***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 1-12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US 5,793,216 (Constant).

With respect to the limitations of claim 1, the reference to Constant discloses a flowmeter for measuring the composition of a fluid, comprising the steps of: measuring the amplitude and phase shift of at least two wave beams that have traveled paths of different distances in the fluid (see Figure 2B; col. 3, lines 42-54; and col. 9, lines 1-12); determining relations modeling the variations in the signals of the waves as a function of distance; and determining the composition of the fluid by comparing the relations with a set of previously determined relations, each relation of the set corresponding to a fluid of known composition (see col. 8, lines 16-21 and 63-65).

With respect to the limitation of measuring attenuation, the reference to Constant fails to expressly disclose measuring attenuation; however, the examiner argues that this feature is inherent to an amplitude measurement given that attenuation is a decrease in amplitude.

With respect to the limitation of claim 2 and 3, the reference to Constant discloses that the wave beams may have two different paths of equal distance the set of previously determined relations. Determining the mean value is a well settled modeling technique that would have been obvious to one of ordinary skill in the art as a means of molding data that fits the situation.

With respect to the limitation of claim 4, the reference to Constant discloses that the set of previously determined relations is obtained by carrying out measurements on fluids of known composition (see col. 8, lines 16-19, 63, and 64).

With respect to the limitation of claim 5, the reference to Constant discloses that the measured values for amplitude and phase shift are compared with values of amplitude and phase shift from known compositions.

With respect to the limitation of claim 6, the equations for determining phase shift and amplitude are not expressly provided, however, the applicants' formulas are well known in the signal processing art, and therefore, would be known to those of ordinary skill in the art.

With respect to the limitation of claim 7, the reference to Constant fails to expressly disclose the formulation used to determine the various signal characteristics of the wave beams; however, the examiner argues that linear regression is a well



Art Unit: 2856

known means for modeling a relationship between two variables and would be known to those of ordinary skill in the art as a means of providing a linear expression of two correlated variables, such as attenuation/amplitude and phase shift.

With respect to the limitation of claim 8, the reference to Constant discloses that the measurements take into account the temperature of the fluid.

With respect to the limitation of claim 9, the reference to Constant fails to expressly disclose that the "best result" is selected; however, the examiner argues that choosing the best result would have been obvious to one of ordinary skill in the art because the best result is the one that proves the condition or measurement most convincingly.

With respect to the limitation of claim 10, the reference to Constant discloses that a model is created by means of a set of previously determined relations (see col. 8, lines 16-21 and 63-65).

With respect to the limitation of claim 11, the reference to Constant discloses that histograms are

With respect to the limitation of claim 12, the reference to Constant discloses that the wave beams are microwave beams (see col. 3, line 48).


***Conclusion***

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Larkin whose telephone number is 571-272-2198. The examiner can normally be reached on 8:00 AM - 5:00 PM Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel Larkin  
AU 2856  
23 January 2006

  
**DANIEL S. LARKIN**  
**PRIMARY EXAMINER**